UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/728,552	12/04/2003	David Johnston	P17478/1020P17478	8773

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KACVINSKY LLC
C/O INTELLEVATE
P.O. BOX 52050
MINNEAPOLIS, MN 55402

EXAMINER
JUNTIMA, NITTAYA

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

	Application No.	Applicant(s)
	10/728,552	JOHNSTON, DAVID
Office Action Summary	Examiner	Art Unit	
	NITTAYA JUNTIMA	2416	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS,
WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>22 April 2009</u>.

2a)☒ This action is **FINAL**.   2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>1,2,6,8-12,14,15 and 19</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>1,2,6,10-12,14,15 and 19</u> is/are rejected.

7)☒ Claim(s) <u>8-9</u> is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage
      application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____.

5)☐ Notice of Informal Patent Application

6)☐ Other: _____.

DETAILED ACTION

1.   This action is in response to the Amendment filed on 4/22/2009.

2.   **Claims 1-2, 6, 8-12, 14-15, and 19** are pending (claims 3-5, 7, 13, and 16-18 were

canceled).

Claim Objections

3.   **Claims 1, 6, 10, and 15** are objected to because of the following informalities:

-     in claim 1, lines 2, 4, 8, and 9, all citation of the term "configuration" should be

replaced with "microcode";

           lines 10-11, "and based on microcode information from a microcode

module" should be changed to "from said microcode module" since claim 1 now corresponds to

Fig. 5 and paragraph 0043, and there is no teaching of both the configuration module and

microcode module in the same embodiment anywhere in the specification;

-     in claim 6, line 1, "claim 5" should be changed to "claim 1" for correct dependency;

-     in claim 10, lines 6, 7, 8, 12, 14, all citation of the term "configuration" should be

replaced with "microcode";

           lines 14-15, "and based on microcode information from a microcode

module." should be changed to "from said microcode module" since claim 10 now corresponds

to Fig. 5 and paragraph 0043, and there is no teaching of both the configuration module and

microcode module in the same embodiment anywhere in the specification;

-     in claim 15, lines 5, 6, and 9, all citation of the term "configuration" should be

replaced with "microcode";

lines 9-10, "and microcode information from a microcode module"

should be changed to "from said microcode module" since claim 15 now corresponds to Fig. 5

and paragraph 0043, and there is no teaching of both the configuration module and microcode

module in the same embodiment anywhere in the specification.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

4.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the

basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5.   **Claims 1, 2, 6, 15, and 19** are rejected under 35 U.S.C. 102(e) as being anticipated by

Devanagondi (US 2003/0108038 A1).

Regarding **claims 1 and 15**, as shown in Fig. 5, Devanagondi teaches an apparatus (a

filtering data base 412, a CAM 512, a pointer 514, an EEPROM 516, and microprocessor 518,

collectively), comprising:

A configuration/microcode module (an EEPROM 516) store configuration/microcode

information including instructions to reconfigure one or more hardware elements (EEPROM 516

stores microcode/commands for controlling the operations of, i.e., reconfiguring, the chip(s)

within the microprocessor 518 to appropriately handle a received data packet in the identified

format, paragraph 0038).

A hardware-based parsing module (a filtering data base 412, a CAM 512, a pointer 514,

and microprocessor 518, collectively) to connect to said configuration/microcode module (an

EEPROM 516), said parsing module comprising a microcode sequencer (a filtering database

412) configured to use mask (masking operation 622, Fig. 6, paragraph 0033) and compare data

(comparator 612, Fig. 6, paragraph 0033) to decode field types in a received frame of

information (incoming packet 410) to determine a frame format associated with said frame (a

signature word 416 identifying a particular type or format of the packet is identified by a filtering

database 412, paragraphs 0032-0034, 0036, and 0038), retrieve configuration/microcode

information corresponding to said frame format (microcode/commands for handing the identified

packet format are retrieved by a CAM 512 and a pointer 514, collectively, paragraph 0038), and

reconfigure a set of hardware elements to parse said frame based on the retrieved

configuration/microcode information from said microcode module (the chip(s) within the

microprocessor 518 is reconfigured to appropriately handle a received data packet in the

identified format, paragraph 0038).

Regarding **claim 2**, Devanagondi teaches that said parsing module (a filtering data base

412, a CAM 512, a pointer 514, and microprocessor 518, collectively) outputs a field type for

said frame (a signature 416 identifying a particular type or format of packet 416, paragraph

0038).

Regarding **claims 6 and 19,** Devanagondi also teaches a delay line module

(microprocessor 518, Fig. 5) to buffer said frame during said frame parsing (paragraph 0038).

Claim Rejections - 35 USC § 103

6.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in
> section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are
> such that the subject matter as a whole would have been obvious at the time the invention was made to a person
> having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the
> manner in which the invention was made.

7.   **Claims 10 and 14** are rejected under 35 U.S.C. 103(a) as being unpatentable over an art

of record, Korpela (EP 0 852 448 A1) in view of Devanagondi (US 2003/0108038 A1).

Regarding **claim 10**, Korpela teaches a system (Fig. 1), comprising:

At least one base station (radio access networks 20a, 20b, 20c, Fig. 1) to communication

frames of information using a plurality of different frame formats (col. 4, lines 12-16, col. 8,

lines 50-56)

A mobile station (mobile terminal 10, Fig. 1) to receive said frames of information, said

mobile station comprising a receiver (RF circuit 12, digital signal processor device 13, and

control device 15 constitute a receiver) to receive and process said frames (col. 4, lines 25-40,

col. 8, lines 50-56).

However, Korpela does not teach that said receiver comprises a reconfigurable hardware-based frame parser comprising a configuration/microcode module and a parsing module as claimed.

In an analogous art of data packet parser, as shown in Fig. 5, Devanagondi teaches a reconfigurable hardware-based frame parser (a filtering data base 412, a CAM 512, a pointer 514, an EEPROM 516, and microprocessor 518, collectively) comprising:

A configuration/microcode module (an EEPROM 516) to store configuration/microcode information including instructions to reconfigure one or more hardware elements (EEPROM 516 stores microcode/commands for controlling the operations of, i.e., reconfiguring, the chip(s) within the microprocessor 518 to appropriately handle a received data packet in the identified format, paragraph 0038).

A parsing module (a filtering data base 412, a CAM 512, a pointer 514, and microprocessor 518, collectively) to connect to said configuration/microcode module (an EEPROM 516), said parsing module comprising a microcode sequencer (a filtering database 412) configured to use mask (masking operation 622, Fig. 6, paragraph 0033) and compare data (comparator 612, Fig. 6, paragraph 0033) to decode field types in a received frame of information (incoming packet 410) to determine a frame format associated with said frame (a signature word 416 identifying a particular type or format of the packet is identified by a filtering database 412, paragraphs 0032-0034, 0036, and 0038), retrieve configuration/microcode information corresponding to said frame format (microcode/commands for handing the identified packet format are retrieved by a CAM 512 and a pointer 514, collectively, paragraph 0038), and reconfigure a set of hardware elements to parse said frame based on the retrieved

configuration/microcode information from said microcode module (the chip(s) within the

microprocessor 518 is reconfigured to appropriately handle a received data packet in the

identified format, paragraph 0038).

Given the teaching of Devanagondi, it would have been obvious to one skilled in the art

at the time the invention was made to modify the Korpela such that said receiver would comprise

a reconfigurable hardware-based frame parser comprising a configuration/microcode module and

a parsing module as claimed. The suggestion/motivation to do so would have been to provide a

data packet parser that can accommodate new or changed data packet formats without the need

for changing or redesigning hardwired logic or other hardware by merely making software

changes as suggested by Devanagondi (paragraph 0006).

Regarding **claim 14**, Korpela does not teach a delay line module for buffering said frame

during said frame parsing.

However, Sarkinen teaches a dual port memory buffer 416 in Fig. 4 for buffering a frame

during frame parsing (equivalent to a delay line module). See col. 12, lines 24-26, 36-42, 64-col.

13, lines 1-3.

Therefore, it would have been obvious to one skilled in the art at the time the invention

was made to modify the teaching of Korpela to include a delay line module as claimed. The

suggestion/motivation to do so would have been to have the frame written into the buffer and

read out from after frame processing is complete as taught by Sarkinen (col. 12, lines 64-col. 13,

lines 3 and Fig. 4).

8.   **Claims 11 and 12** are rejected under 35 U.S.C. 103(a) as being unpatentable over an art

of record, Korpela (EP 0 852 448 A1) in view of Devanagondi (US 2003/0108038 A1), and

further in view of an art of record, Johnson (US 7,184,722 B1).

Regarding **claim 11**, although Korpela teaches the inherent MAC unit (the media access

controller) for processing MAC layer (col. 6, lines 6-12), the combined teaching of Korpela and

Devanagondi does not explicitly teach that the receiver comprises a power amplifier, an RF/IF

converter to connect to said power amplifier, an IQ module to connect to said RF/RF converter, a

baseband processor to connect to said IQ module and the media access controller.

However, Johnson teaches a wireless transmitter such as a mobile unit 18 in Fig. 2 for

communicating to a plurality of base stations that includes a receiver (radio 60 working in a

receiving direction as shown in Figs. 5A and 5B) comprising a power amplifier (amplifier

75,Fig.5A in the reception portion), an RF/IF converter (RF/IF converter 72,Fig.5A in the

reception portion), an IQ module (I/Q modem 68,Fig. 5B in the reception portion), and a

baseband processor (baseband processor PHY 66,Fig.5B in the reception portion) connecting to a

MAC (MAC 64,Fig. 5B). See col. 8, lines 7-18, 41-col. 9, lines 1-42.

Therefore, it would have been obvious to one skilled in the art at the time the invention

was made to further modify the combined teaching of Korpela and Devanagondi such that the

power amplifier, RF/IF converter, IQ module, and baseband processor would be connected to the

receiver and media access controller as claimed. The suggestion/motivation to do so would have

been to enable the received wireless signal carrying data to be processed correctly.

Regarding **claim 12**, Korpela does not teach that the inherent MAC (see rejection of claim 10) comprises a reconfigurable hardware-based frame parser.

However, in an analogous art, Devanagondi teaches a reconfigurable hardware-based frame parser (a filtering data base 412, a CAM 512, a pointer 514, an EEPROM 516, and microprocessor 518, collectively, paragraph 0038).

Given the teaching of Devanagondi, it would have been obvious to one skilled in the art at the time the invention was made to further modify the combined teaching of Korpela and Johnson such that include the reconfigurable hardware-based frame parser would be comprised in the media access controller as claimed. The suggestion/motivation to do so would have been to provide a data packet parser that can accommodate new or changed data packet formats without the need for changing or redesigning hardwired logic or other hardware by merely making software changes as suggested by Devanagondi (paragraph 0006).

Allowable Subject Matter

9.   **Claims 8 and 9** are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

10.   Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE

MONTHS from the mailing date of this action. In the event a first reply is filed within TWO

MONTHS of the mailing date of this final action and the advisory action is not mailed until after

the end of the THREE-MONTH shortened statutory period, then the shortened statutory period

will expire on the date the advisory action is mailed, and any extension fee pursuant to 37

CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

however, will the statutory period for reply expire later than SIX MONTHS from the date of this

final action.

11.   Any inquiry concerning this communication or earlier communications from the

examiner should be directed to NITTAYA JUNTIMA whose telephone number is (571)272-

3120. The examiner can normally be reached on Monday through Friday, 8:00 A.M - 5:00 P.M.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Seema Rao can be reached on 571.272.3174. The fax phone number for the

organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent

Application Information Retrieval (PAIR) system. Status information for published

applications may be obtained from either Private PAIR or Public PAIR. Status

information for unpublished applications is available through Private PAIR only. For

more information about the PAIR system, see http://pair-direct.uspto.gov. Should you

have questions on access to the Private PAIR system, contact the Electronic Business

Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO

Customer Service Representative or access to the automated information system, call

800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Nittaya Juntima/
Primary Examiner, Art Unit 2416
6/25/2009